



# GLOBAL CLIMATE COALITION

## BACKGROUND INFORMATION on the GLOBAL CLIMATE COALITION

National Environment Policy Institute  
Joint Implementation Program

February 1, 1994  
The Watergate Hotel  
Washington D.C.



# BACKGROUND

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## **The Global Climate Coalition An Overview**

### **What It Is:**

The Global Climate Coalition (GCC) is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on the global climate change issue.

GCC is dedicated to: 1) promoting scientific research on global climate change, 2) analyzing economic and societal impacts of policy options, 3) creating an understanding of the global dimensions of the issue to ensure that solutions are addressed equitably by all nations, 4) encouraging transfer of technology to developing nations, and 5) promoting a voluntary commitment among members to "Guiding Principles for Business" that benefit the environment, are consistent with good business practices and are technically and economically feasible.

### **What it Does:**

GCC is the leading voice for industry on the global climate change issue, and represents its members before government agencies, Congress, the media and the general public. The group works cooperatively with governmental agencies and others on an international basis. The coalition contributes to a balanced debate on global climate change by sponsoring independent studies that examine the potential impacts of proposed global climate change policies on the economy. Through educational materials and programs, GCC supports an informed press and public, and an open scientific dialogue.

### **Where does GCC Stand?**

GCC agrees with the scientific presumption that there is a natural "greenhouse effect" that protects Planet Earth from the freezing rigors of space. In addition, GCC agrees that the amount of so-called greenhouse gases in the Earth's atmosphere is increasing. It is an open question however, whether manmade contributions of greenhouse gases have contributed, or ever will contribute to an "enhanced greenhouse effect," which could result in a potentially harmful increase in global surface air temperatures.

There is considerable uncertainty within the scientific community about fundamental questions relating to this issue. Predictions about anthropogenic global warming are based on computer models designed to simulate atmospheric chemistry. GCC agrees with a growing number of



scientists who point out that these climate models (which have been used to frame the debate) can neither confirm that global warming is occurring now or predict future climate changes. While some minor climate changes have been suggested, it has yet to be determined whether these are the result of natural forces (like solar flares), human activity, natural long-term climate cycles or a combination of all of these factors.

GCC supports a coordinated international research program, the continuation of U.S. climate research efforts (\$1.4 billion requested for FY 1993), in addition to independent and industry sponsored research. GCC also supports activities to reduce greenhouse gas emissions that make sense in their own right, thus continuing sound business practices that will lead to more efficient use of energy.

GCC believes there are trade-offs associated with many of the regulatory schemes to control greenhouse gas emissions. Some of these proposals would impose a direct tax on businesses and consumers through energy or environmental fees while other proposals would impose a hidden tax through other indirect, control measures. These trade-offs would include higher energy and product costs to American consumers, higher operating costs for industry and a potential negative impact on employment. Importantly, many of these proposals would create a competitive advantage for our international trading partners at the expense of U.S. jobs and economic growth.

#### **Who are GCC Members?**

The current membership of GCC is a broad cross-section of U.S. business organizations and companies representing a range of industrial sectors, including: oil, coal, paper, automobile manufacturing, railroads, chemical manufacturing and utilities.

#### **How is GCC Structured?**

The GCC Board of Directors serves as the organization's governing body. The Operating Committee oversees the functional implementation of GCC activities, and John Shlaes, Executive Director, has oversight of day-to-day operations. To address specific aspects of the global climate change issue and to evaluate policy options, GCC utilizes twelve committees, including Science and Technology, Technology Cooperation, Economic Analysis, Industry Initiatives, and International, to name a few.

#### **For More Information:**

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# GLOBAL CLIMATE COALITION

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## GLOBAL CLIMATE COALITION MEMBERSHIP

### Board Membership

Aluminum Association, Inc.  
American Automobile Manufacturers Association  
American Electric Power Service Corporation  
American Forest & Paper Institute  
American Mining Congress  
American Iron & Steel Institute  
American Petroleum Institute  
American Portland Cement Alliance  
Association of American Railroads  
Atlantic Richfield Company  
Chemical Manufacturers Association  
Cincinnati Gas & Electric Company  
CSX Transportation, Inc.  
Dow Chemical Company  
Drummond Company  
Duke Power Company  
Duquesne Light Company  
Edison Electric Institute  
ELCON  
Exxon  
Illinois Power Company  
Kaiser Aluminum & Chemical Corp.  
National Association of Manufacturers  
National Lime Association  
National Coal Association  
National Rural Electric Cooperatives Association  
Phillips Petroleum Company  
Process Gas Consumers  
Texaco, Inc.  
The Southern Company  
U.S. Chamber of Commerce  
Union Electric Company

### General Membership

American Commercial Barge Line Co.  
Amoco Corporation  
Arizona Public Service Company  
Armco, Inc.  
Association of International Automobile Manufacturers  
BP America, Inc.  
Burlington Northern Railroad  
CIBO  
CONRAIL  
Consumers Power  
Du Pont Company  
Eastman Kodak  
LTV Steel Company, Inc.  
Norfolk Southern  
Northern Indiana Public Service Co.  
Ohio Edison  
Pennsylvania Power & Light Company  
Railway Progress Institute  
Shell Oil Company  
Union Pacific Railroad



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## **INDUSTRY COALITION PROVIDES RECOMMENDATIONS ON US PLAN ON GLOBAL CLIMATE CHANGE**

**WASHINGTON, DC, March 9, 1993.....**The Global Climate Coalition (GCC) released formal comments today to the new Administration on the U.S. National Action Plan (NAP). The NAP details numerous actions the United States is taking to address potential global climate change. Speaking on behalf of the GCC, John Shlaes, executive director, said "The National Action Plan is an excellent first step and contains a comprehensive framework that can endure over the longer term."

"The Global Climate Coalition strongly endorses the basic principles underlying the U.S. National Action Plan," said Shlaes. "These principles include the emphasis on actions, the comprehensive scope, the role of voluntary actions, and the importance of technology cooperation."

First among GCC's recommended improvements to the Plan is the need for an economic impact analysis of proposed actions under the NAP, including an assessment of the impact on economic growth, jobs, international trade and competitiveness. GCC also recommends that the plan identify national circumstances that may lead the U.S. to take actions that may differ from those of other developed countries. For example, "Americans should not be chastised for using energy differently than Europeans do," said Shlaes "we are a larger country and we have a different transportation situation and different housing patterns that affect heating and cooling requirements."

"The GCC also strongly supports the approach taken in the Plan to reject the use of rigid targets and timetables as a strategy for meeting the objectives of the climate treaty," said Shlaes.

(more)



July 6, 1993

"Adoption of rigid targets and timetables does not provide the flexibility to evolve meaningful action plans as the science and national circumstances permit."

"The proposed technology cooperation actions can also be strengthened through better coordination and increased promotion of various federal agency programs, establishment of a single point of contact for industry efforts and implementation of the Technology Cooperation Corps," said Shlaes. GCC supports a Technology Cooperation Corps patterned after the Peace Corps that would supply U.S. know-how and problem solving expertise to developing countries, where the majority of future greenhouse gases will be generated.

The coalition's comments emphasize the "need for a flexible blueprint, with the ability to change and evolve over time as new scientific information becomes available." The GCC recommended a more complete assessment of the scientific uncertainties surrounding global climate change; an increased focus on R&D to develop new technologies to reduce greenhouse gas emissions and increased emphasis on actions affecting developing countries. "There are some very important actions to reduce greenhouse gas emissions that the NAP should include," said Shlaes, "especially from the recently passed Energy Policy Act."

"We plan to vigorously pursue these recommendations and hope to engage in a constructive dialogue with the new Administration on these issues," said Shlaes. Today's statement follows GCC's submission yesterday of formal comments to the Council on Environmental Quality. The United States and other members of the United Nations are obligated to submit a national action plan under the climate treaty or "Framework Convention" signed in Rio de Janeiro during the Earth Summit in June 1992. The comments submitted by GCC and other organizations will be used by the Clinton Administration to determine if the Plan, as submitted to the United Nations just three months ago, should be revised or expanded.

The U.S. was the first nation to ratify the Framework Convention and to submit a National Plan to the UN. According to Shlaes, "The U.S. NAP represents continued U.S. leadership on the issue of global climate change." The coalition noted that the plan is an excellent start, but outlined twelve specific areas where the plan can be improved or strengthened. (See Attachment)

The Global Climate Coalition is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on the global climate change issue. Current coalition membership represents a broad spectrum of virtually all elements of U.S. industry from the energy producing and energy using sectors.

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## **Global Climate Coalition Comments on the U.S. NAP**

### **Twelve Areas for Concern or Needed Improvements**

1. The economic impact of the U.S. NAP must be analyzed, including impacts on economic growth, jobs, international trade and competitiveness;
2. The status of the U.S. Global Climate Research Program and its implications for national actions should be fully described;
3. The relationship between proposed policies to reduce greenhouse gas emissions and a nation's economy, population, structure and form of government should be considered, especially where those factors may lead the U.S. to take actions that may differ from those of other developed countries;
4. The NAP should not adopt rigid targets and timetables as a strategy to implement the Framework Convention;
5. Full Implementation of the Energy Policy Act should be made a cornerstone of the NAP;
6. The full range of steps to reduce greenhouse gas emissions that are being done voluntarily should be included in the NAP along with estimates of the impacts these actions will have.
7. There may be additional opportunities for controlling methane emissions that are not currently part of the NAP.
8. R&D programs to develop new technologies that can reduce carbon dioxide emissions should be more focused and better coordinated;
9. The NAP should integrate actions to lower emissions of greenhouse gases with those actions that adapt to changes should they occur.
10. The NAP should establish a framework and procedure to facilitate Joint Implementation actions with developing countries.
11. There are additional opportunities to enhance carbon sinks through improved global forestry practices;
12. Technology cooperation activities should be strengthened and expanded.



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## **INDUSTRY COALITION RELEASES STUDY SHOWING U.S. AS A LEADER IN ENERGY EFFICIENCY AMONG INDUSTRIALIZED NATIONS**

**WASHINGTON, DC, MARCH 24, 1993.....**The Global Climate Coalition (GCC) released a study today showing that the U. S. is a leader among the G-7 countries in energy efficiency. "The United States made a significantly greater improvement in energy performance than most G-7 countries over the last two decades," said John Shlaes, executive director of the GCC. "This sharply contradicts claims that the United States needs to 'catch up' with other developed countries."

The study compares historical trends and current levels of energy efficiency in the seven major industrialized countries: Canada, France, Germany, Italy, Japan, the United Kingdom and the United States. "When the transportation, residential and manufacturing sectors of each country are analyzed," said Joseph Hezir of the EOP Group, "we found that energy consumption per unit of Gross Domestic Product (GDP) has declined by 30 percent over the last 20 years, more than most other G-7 countries." The EOP Group, A Washington-based consulting firm specializing in economic and scientific analysis of energy and environmental issues, prepared the report for the GCC.

"The study clearly refutes those who say we lag behind other industrialized countries in energy efficiency," said Shlaes. Unless someone wants to force Americans to live in significantly smaller homes, or can find a way to shrink the longer distances we have to travel and move products in this vast country, dramatic improvements in per capita energy use are simply not feasible." The study indicates that the higher levels of energy consumption in the U.S. are based primarily on the country's size, the way Americans want to build homes and communities, and the American standard of living -- not because we are less efficient at using comparable units of energy.





"We discovered a clear pattern in the three sectors analyzed - transportation, residential and manufacturing - with all of them showing substantial improvement in energy performance," Hezir said. "For example, the rate of improvement in new car fuel economy in the U.S. has been about twice as high as the other industrialized countries." The study also shows that the U.S. is the only G-7 country that has improved overall passenger automobile unit energy efficiency (measured as auto energy consumption per passenger mile traveled) during the study period.

"Several arguments have been made over time about U.S. energy inefficiency," Hezir pointed out. "We use more energy to run appliances, not because our appliances are less efficient, but because we have more appliances and we use them more often. We use more energy to heat our homes, not because we use energy less efficiently, but because Americans live in bigger homes and rely on central heating systems. In fact, once you adjust for home size and climate, U.S. residential energy efficiency is better than most of the G-7 countries."

"While we should continue efforts to use energy more efficiently," Shlaes said, "the study does imply that drastic measures that harm the overall economy are not necessary in order to keep pace with our industrialized trading partners." According to Shlaes, new technology developed as an integral part of a strong and growing economy will continue to improve the efficiency of energy consumption in the United States. "A favorable investment climate, natural competitive pressures and on-going voluntary efforts by GCC members will also contribute to this objective," said Shlaes.

The Global Climate Coalition is the leading business voice on climate change issues. It is an organization of more than 50 business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on the global climate change issue. Current coalition membership represents a broad spectrum of virtually all elements of U.S. industry from the energy producing and energy using sectors.

For further technical information on the study, please contact Joe Hezir or David Gibbons of the EOP Group at (202) 833-8940.

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## **Global Climate Coalition Releases Study Showing U.S. Outpacing the European Community In Setting Tough Environmental Standards**

**WASHINGTON, D.C., September, 15, 1993.....**The United States is outpacing countries of the European Community (EC) in setting tough environmental standards, spending on environmental protection and achieving significant environmental improvements, a paper released today by the Global Climate Coalition (GCC) reveals. The paper examines the environmental policies and standards of the United States and the EC, as well as the real-world impacts of the programs.

According to the study, U.S. environmental standards are in many cases more stringent than comparable standards in Europe. For example, the United States has much lower limits on automobile emissions, much more stringent testing procedures, and much stricter controls over motor vehicle fuel specifications. In addition, the United States is the only nation with federal standards for motor vehicle fuel economy.

The GCC analysis also revealed that the United States has a more stringent and more comprehensive regulatory program governing the management of hazardous wastes.

The study shows that the United States has, for a wide range of selected indicators, achieved a cleaner environment and lower levels of industrial and municipal discharges. Among the specific findings were that the United States has higher water quality levels than the EC for major river systems; the United States has achieved lower levels of sulfur dioxide emissions (linked to acid rain) than the EC; and the United States has achieved higher levels of municipal waste water treatment than EC countries.

According to GCC Executive Director John Shlaes, "The results of this study debunk the myth that the United States is lagging in its commitment to preserving and protecting the environment. Clearly, when you examine the facts, the United States emerges as a real global leader on environmental challenges."



Shlaes also pointed out findings that the United States invests 40 percent more than EC countries in environmental protection. The United States currently spends 1.7 percent of its gross domestic product (GDP) on the environment, compared with 1.2 percent from the EC.

Shlaes commented, "During the past two decades Americans and Europeans have made tremendous strides toward a better environment. It's important to recognize the extent of these achievements. But it is wrong to portray the United States as an environmental laggard. U.S. ingenuity, fostered by a growing economy, is largely responsible for our current leadership and establishes the United States as a model for solving future environmental challenges."

The EOP Group, a Washington-based consulting firm specializing in economic and scientific analysis of energy and environmental issues, prepared the report for the GCC.

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## **New Study Shows Major Reductions in Carbon Dioxide Emissions By U.S. Industry**

**WASHINGTON, DC, October 26, 1993.....**U.S. industry has achieved major reductions in carbon dioxide intensity by using energy more efficiently, according to a report released today by the Global Climate Coalition (GCC). The report, prepared by the EOP Group, shows that while the economy grew by almost 50 percent between 1974 and 1988, U.S. industry actually reduced carbon dioxide emissions, per unit of output, by up to 37 percent.

"The report demonstrates that energy efficiency improvements generally result from investments in cost effective and technology-based measures that are made to improve productivity and competitiveness," said GCC Executive Director John Shlaes. "This has direct implications for the policy debate between the White House and Congress as they continue to discuss the President's Climate Action Plan.

Industry is not always given full credit for the energy efficiency improvements because more stringent environmental requirements and/or shifts in consumer demand can result in higher energy consumption, masking efficiency gains," Shlaes said. "This shows industry's ongoing commitment to energy efficiency and points to the ability of industry to make voluntary improvements which will reduce emissions," he said. "It also makes an important case for examining greenhouse gas emissions policies in light of their impact on specific industries. To be effective, policies have to be flexible and the interactions among economic, energy and environmental policies have to be carefully considered," Shlaes added.

As a result of increased efficiency, the report indicates that U.S. industry has been successful in achieving significant reductions in carbon emissions. U.S. manufacturing, as a whole, has reduced carbon emissions 8.1 percent, with a 55.8 percent increase in production. This was found to exceed the energy intensity reductions in Japan and Germany (the former Western Sector), despite the fact that during the period from 1974 to 1988, the United States allocated a smaller percent of its GDP to gross domestic investment.

(More)



The EOP Group, which prepared the report, is an independent DC-based consulting firm specializing in economic and scientific analysis of energy and environmental issues. The study relied upon data provided by the Departments of Energy, Commerce, Labor and the Federal Reserve Board to examine energy performance and carbon dioxide emissions in nine selected industries: petroleum refining, iron and steel, aluminum, paper, chemicals, cement, automobile manufacturing, electric utilities and railroads.

"These industries were selected," said Shlaes, "because they help form the backbone of the American economy and could be significantly affected by any climate change mitigation plan. All of these industries have ongoing commitments to improve energy efficiency on a cost-effective basis."

The report documents that these industries reduced energy consumption, per unit of output, by up to 41 percent between 1974 and 1988, the last year for which comprehensive data is available. Although some industries experienced increased energy consumption, the report shows that these increases have been slower than the rate of production. "This means that a growing economy will require more energy, even if those industries using more energy are using it more efficiently," said Shlaes.

Industries have achieved this success and are continuing to do so through an array of extensive energy-efficiency improvements, according to the report. Joseph Hezir, a principal of the EOP Group, explained, "Our analysis shows that the specific approaches to energy efficiency vary greatly, utilizing extensive research and development in new technologies, refinements and controls in process and operations, changes in management practices and adjustments in the use of waste materials. There is no 'one-size fits all' approach to energy efficiency improvements," added Hezir.

"The pace of continued U.S. industry progress will depend, in part," said Shlaes, "on government economic and environmental policies that affect the availability and application of private capital investment." The major efficiency improvements by nearly every major U.S. manufacturing sector occurred despite the difficult challenges of lower levels of capital investment and stricter environmental standards than other industrialized nations."

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# BACKGROUND

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1993

## **Science and Global Climate Change: What Do We Know? What Are the Uncertainties?**

### **About this backgrounder**

In the past two decades, many scientists have raised concerns about the future of the earth's climate. In the 1970s, leading scientists raised concerns about global cooling, leading to predictions of a coming ice age. Some scientists still recognize a cooling potential.

In the mid-1980s, concern shifted to global warming, with a number of scientists stating their belief that the Earth was warming as a result of an increasing concentration of greenhouse gases in the atmosphere. Some scientists predicted dramatic increases in temperature, which would lead to the melting of polar ice-caps, rising of sea levels, and other catastrophic events. Today, after several years of investigation, many of these dire predictions have been moderated.

Global climate policy decisions must be made with the benefit of an adequate scientific understanding of the how and why of climate changes. Scientists remain divided on a number of climate change issues: Are increases of man-made gases contributing to global warming? What are the causes of global temperature change over the past century? How accurate are forecasts based on computer modeling? Are sea levels rising? How will increases in carbon dioxide (CO<sub>2</sub>), a greenhouse gas, affect the world's plant life?

This backgrounder responds to these questions, which are being debated in the scientific community today, and provides a resource section for additional reading.

### **Are increases of man-made greenhouse gases contributing to global warming?**

Scientists agree that the greenhouse effect is a real, naturally occurring phenomenon. Greenhouse gases trap the sun's warmth in the lowest layers of the atmosphere, keeping Earth warm enough to sustain life. Without the natural greenhouse effect the average surface temperature on Earth would fall to about zero. The earth's average temperature is about 60 degrees Fahrenheit (F), but in the natural greenhouse effect, atmospheric water vapor and clouds play a far greater role than other greenhouse gases. To put this in perspective, even if all man-made greenhouse gases were to disappear, water vapor and clouds would still leave us with almost all of the current greenhouse effect.

Scientists also agree that atmospheric levels of greenhouse gases (such as CO<sub>2</sub>) are increasing as a result of human activity. But scientists differ on whether the increase in the concentrations of these



gases will cause an "enhanced greenhouse effect," or warming of the planet, because the role of greenhouse gases in climate change is not well understood.

As an example of this uncertainty, a recent Gallup poll of climate scientists in the American Meteorological Society and the American Geophysical Union asked whether there has been any identifiable, human-induced global warming to date. Forty-nine percent of respondents said no; 33 percent said they did not know; and only 18 percent thought some warming has occurred.

### **What are the causes of global temperature change over the last century?**

Average surface air temperature readings appear to have increased about 1 degree Fahrenheit during the past 100 years. Just as the greenhouse effect is a natural phenomenon, so are climate cycles. While temperature records do not extend much before about 100 years ago, making it difficult to view the observed temperature change in the context of an overall trend, many scientists believe the observed increase in temperature within the last 100 years could be a result of natural fluctuations in climate. Notably, almost all the temperature increase in this century occurred before 1940, well before any significant increase in man-made CO<sub>2</sub> emissions.

Analysis of the temperature data records for the last 100 years are subject to several uncertainties, including the urban heat island effect, which can raise temperatures around measurement stations as urban areas expand. Urbanization increases everything from lighting to automobile exhaust and retained heat from buildings and roads. This heat island effect must be considered when looking at the long-term temperature record and explains some of the global temperature increase.

Land-based temperature records show a warm period in the 1980's but satellite measurements, which are relatively free from the distortions resulting from location, have shown no global temperature trend over the past 14 years. The satellite techniques offer the future promise of comparing observational records with global climate model projections.

### **How accurate are forecasts based on computer modeling?**

Computer models, called General Circulation Models (GCM), are used to project future temperature and climate change scenarios. The fact is, however, that computer modeling is inexact and uncertain. Many of the world's foremost climate modelers concede that today's models can not represent the complex interactions that determine temperature and climate. At this time, modeling is unable to resolve how, where, or even whether potential global climate change can affect specific regions of the planet.

Many scientists believe current climate models are an inadequate basis for policy decisions. The manner in which these models account for water vapor (the major greenhouse gas) and cloud cover is among their greatest shortcomings. Even small modifications in these factors can dramatically alter model projections. Current climate models cannot credibly predict CO<sub>2</sub>-induced climate changes. Today's models are only beginning to take into account the radiative effects of phenomena which counteract warming (such as sulfur dioxide emissions). The Intergovernmental Panel on Climate Change (IPCC) was formed in 1988 by the United Nations Environment Programme and the World Meteorological Organization to evaluate the science, potential impacts and potential policies for climate change. Presenting its findings, the IPCC stated, "Climate models are only as good as our understanding of the processes which they describe, and this is far from perfect."

### **Are sea levels rising?**

There has been a great deal of speculation about a potential sea level rise if the global climate gets warmer. Since even the most dire predictions of a warming trend would still leave the polar regions well below freezing, some scientists question the predictions of a dangerous melting of the polar ice caps.

While most scientists agree there has been some observed rise in sea level over the last century, there are questions about the accuracy of sea level measurements. Taken primarily through tide-gauge records, sea level measurements are difficult to assess because of vertical land movements, atmospheric pressure, winds, ocean currents and lunar cycles. With regard to the future, several recent studies suggest that warmer air temperatures will increase snowfall, decreasing the likelihood of sea level rise due to polar ice cap melting.

### **How will increases in CO<sub>2</sub> affect the world's plant life?**

While scientists disagree on the link between CO<sub>2</sub> increases and any global warming, there is strong scientific evidence pointing to the link between CO<sub>2</sub> increases and improved plant productivity. Plant life "breathes" CO<sub>2</sub> as humans do oxygen. Recent studies have suggested, and many agricultural experts believe, that increasing atmospheric CO<sub>2</sub> levels may in fact accelerate plant growth, given adequate nutrients in the soil.

### **In summary**

Sound policy-making rests on resolving scientific uncertainty. Focused research is critically needed to address the outstanding scientific uncertainties that surround global climate change. Although the U.S. federal research program is large, there has been debate over its focus. The usefulness of ongoing research will depend in large part on how well it can scientifically clarify answers to the questions facing both scientists and policymakers. The research must resolve the questions raised above as well as other key uncertainties such as: 1) What are the roles of cloud cover, the oceans, polar ice caps, soil and forests and their interactions? and 2) How can we differentiate natural climate variations from changes attributable to man-made emissions? If the research fails to address these and other issues, the result may be stacks of good scientific articles, but little progress in translating data into information that policy makers can use to make effective decisions.

### **Recommended Reading**

Boettcher, C.J.F. Science and Fiction of the Greenhouse Effect and Carbon Dioxide. The Hague, Netherlands: The Global Institute for the Study of Natural Resources, 1992. (Copies are available through the Science and Environmental Policy Project at 703-527-0130.)

Houghton, J.T., Jenkins, G.J., ed. Climate Change: The IPCC Scientific Assessment. Cambridge University Press, 1990.

Houghton, J.T., Jenkins, G.J., Ed. Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment. Cambridge: Cambridge University Press, 1992.

Singer, Fred S., ed. The Greenhouse Debate Continued: An Analysis and Critique of the IPCC Climate Assessment. San Francisco: ICS Press, 1992. (Copies are available from ICS Press at



1-800-326-0263. Please refer to ISBN 2-55815-233-4)

Lindzen, Richard S. "Global Warming: The Origin and Nature of the Alleged Scientific Consensus." Regulation: Cato Review of Business and Government (Spring 1992): 87-98. *(Copies are available through the Cato Institute at 202-546-0200.)*

Michaels, Patrick J. Sound and Fury: The Science and Politics of Global Warming. Washington, DC: Cato Institute, 1992. *(Copies are available through the Cato Institute at 202-546-0200.)*

1A27-3302.01

Singer, S. Fred. "Warming Theories Need Warning Label." The Bulletin of Atomic Scientists (June 1992): 34-39.

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## **Technology Cooperation: Sustaining Economic Growth and Environmental Improvement**

For over two decades, U.S. industry has been a world leader in developing energy technologies and implementing environmental policies. Every year, American industry spends more than \$100 billion to protect the environment, and U.S. industry already has environmental technology programs overseas. By providing cleaner, more energy-efficient technologies and know-how to developing countries, the United States can build on its existing efforts and simultaneously help reduce global emissions of greenhouse gases. Technology innovation and cooperation, guided by the marketplace, not government mandates, is the key to addressing the dual challenges of sustaining economic growth and environmental improvement. U.S. business has the opportunity and the know-how to meet this challenge.

### **What Is Technology Cooperation?**

Technology cooperation is aimed at helping developing countries expand their economies and quality of life, while at the same time improving their environmental performance, not only with regard to limiting emissions of greenhouse gases but to limiting emissions of pollutants such as NO<sub>x</sub> and SO<sub>2</sub>. Technology cooperation is interpreted broadly to include efforts that combine technology and equipment with "soft" technology -- training, management assistance and software. A major product of the private sector's vast operational experience, soft technology could be one of our country's greatest contributions to developing countries and those with economies in transition.

### **Importance of Technology Cooperation**

The U.N. Intergovernmental Panel on Climate Change (IPCC), charged with investigating the science and economics behind global climate change, predicts that by 2025, non-OECD countries will be responsible for 68 percent of all energy-related carbon dioxide emissions. In fact, both developing countries and former centrally planned economies already emit a far greater amount of greenhouse gases for each unit of GNP than industrialized nations. As developing nations' populations, economies and energy demands increase, this disparity is predicted to widen. Massive increases in emissions from developing countries would overwhelm any emissions reductions made by industrialized nations.

When technology cooperation occurs with limited government assistance from the American private sector to the private sector of receiving nations, it provides an effective and relatively lower-cost means to improve global environmental protection and foster economic development. Given the current high level of energy efficiency in the United States and other developed nations, reducing greenhouse gas emissions by improving energy efficiency is far more cost-effective in developing and newly industrialized nations than in industrialized nations. For this reason, developing countries have an important role to play in any strategy to reduce global greenhouse gas emissions. Special consideration should be given to providing



appropriate help to these nations in upgrading their environmental policies, industrial performance and resource management.

Technology cooperation also makes economic sense for developed nations, such as the United States. Opening new markets for American technology and services can contribute to a domestic economic recovery strategy, providing new opportunities for U.S. industry and American workers as well as fostering the global cooperation needed for lasting environmental improvements.

### **Technology Cooperation Between Government and Industry**

Although technology cooperation is best achieved from the American private sector to that of the receiving nation, many developing countries lack a private sector. Significant improvements are needed within developing countries to encourage cooperative arrangements. Clearly, there is a role for governments, developing and industrialized, to play in technology cooperation. The federal government is already working to improve technology cooperation between itself and private industry to enhance the competitiveness of U.S. technology. Significant programs are under way at Department of Energy (DOE) National Laboratories, for example, to employ the U.S. government's research capabilities in these new efforts with the private sector. The federal government's resources are important to helping industry identify opportunities for technology cooperation and to providing market-based financing options to encourage the export of American products.

In addition, the United States supports programs at the Agency for International Development, the Export-Import Bank, the World Bank and many regional development banks that could support international technology transfers. The EPA, DOE and the Departments of Commerce (DOC) and State also have important resources and programs that could provide needed information to industry. The DOE's Assisting Deployment of Energy Practice and Technologies (ADEPT) program, for example, will help developing countries and economies in transition select and apply new energy technologies.

### **Meeting the Challenges of Improved Technology Cooperation**

Over the past three years, the Global Climate Coalition, the nation's leading business voice on global climate change issues, has participated in national and international panels on technology cooperation with representatives of Congress, the EPA, the DOC and the DOE. The coalition also has spoken on technology cooperation issues before the Intergovernmental Negotiating Committee (INC) and co-chaired a conference with the DOC on technology transfer to Eastern Europe. Many of GCC's member companies have joint ventures and other projects through which they provide currently available energy and environmental technologies overseas.

For example, The Southern Company, one of the largest investor-owned electric utilities in the United States, has undertaken a study for the Slovak Power Enterprise in Czechoslovakia on how to improve the environmental performance and reliability of a 1,320-megawatt power plant. Kaiser Aluminum is working with Russian officials to improve the environmental performance of a smelter in Siberia and is also providing technical services to smelters and refineries in other countries. This experience has given the coalition insight into the special considerations necessary for improving technology cooperation programs.

The federal government can greatly assist the private sector in efforts to improve technology cooperation through a number of measures, including:

**Technology Cooperation Corps.** The Global Climate Coalition and other business groups have proposed establishing a business-initiated Technology Cooperation Corps as a mechanism to promote industry-led technology cooperation efforts. This program would send industry managers overseas to examine environmental and energy-related issues and to design solutions to problems such as reducing methane leakage in natural gas systems or increasing the energy efficiency of fossil fuel power plants. With both greater cooperation from financial institutions and better access to government information on transfer opportunities, the Technology Cooperation Corps could coordinate the United States' various programs and serve as a conduit for private industry assistance to many developing nations and countries with economies in transition.

**Elimination of Impediments to Technology Cooperation.** Although better coordination and communication between government and industry will facilitate technology cooperation, there are some issues that still need to be addressed. Among the most important issues is the guarantee of intellectual property rights, including protection for patents, trademarks and copyrights. Without such a guarantee, companies will lack a strong incentive to pursue the work of technological and industrial innovation overseas. Also, the uncertainties surrounding antitrust implications should be resolved to encourage joint ventures among private firms, which will allow companies to merge their resources and develop and introduce new technologies more quickly and cost-effectively.

**Assistance with Needs and Capabilities Assessments.** Technology cooperation is an important component of the U.N. Framework Convention on Climate Change, which states, "The developed countries...shall take all practicable steps to promote, facilitate, and finance, as appropriate, the transfer or access to environmentally sound technologies and know-how to other parties, particularly developing countries...."

Countries that have ratified the Framework Convention could include a "Technology Assessment" component in their National Action Plans. If properly prepared, the National Action Plans can provide a wealth of information about the abilities of countries to supply technology, as well as information crucial to identifying the needs of the countries wishing to receive technology. Only with this information can cooperative efforts be designed to be efficient and effective.

**Other Measures.** Multi-lateral financial institutions can provide loans or other types of funding to developing countries to bridge the gap between low-cost technologies and more expensive, but better, technologies from a U.S. company. The federal government also can organize workshops and conferences, both in the United States and overseas, to promote U.S. technology to developing countries, as well as support research, development, demonstration and commercialization programs. In addition, the government can encourage research and development across a broad spectrum of technology by offering tax credits and other incentives for companies and industries investing in new technology.

## **Summary**

Improved technology cooperation between developed and developing nations and between the public and private sector will foster a stable foreign investment climate and contribute greatly to far-reaching environmental improvements in addition to increasing the number of high-wage jobs as a result of opening new export markets for U.S. firms already established as world leaders.

*The Global Climate Coalition is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on the global climate change issue.*

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